HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, Colorado 80527-2400

PATENT APPLICATION

ATTORNEY DOCKET NO. 200208926-1

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s):	**Omer Gila et al.**	**Confirmation No.:**	**3097**
Application No.:	**10/658,939**	**Examiner:**	**Isiaka O. Akanbi**
Filing Date:	**September 9, 2003**	**Group Art Unit:**	**2886**

Title: Densitometers and Methods for Measuring Optical Density

Mail Stop Appeal Brief-Patents
Commissioner For Patents
PO Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on 8/18/2008.

☒ The fee for filing this Appeal Brief is $540.00 (37 CFR 41.20).

☐ No Additional Fee Required.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

☐ (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d)) for the total number of months checked below:

☐ 1st Month $130	☐ 2nd Month $490	☐ 3rd Month $1110	☐ 4th Month $1730

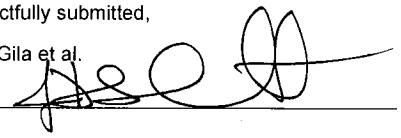
☐ The extension fee has already been filed in this application.

☒ (b) Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account 08-2025 the sum of $ 540. At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees.

Respectfully submitted,

Omer Gila et al.

By 

James D. Shaurette

Attorney/Agent for Applicant(s)

Reg No. : 39,833

Date : 10/20/2008

Telephone : 509/624-4276

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Serial No. 10/658,939
Filing Date..... September 9, 2003
Inventor..... Omer Gila et al.
Assignee..... Hewlett-Packard Development Company, L.P.
Group Art Unit 2886
Examiner..... Isiaka Akanbi
Attorney's Docket No. ..... PDNO. 200208926-1
Confirmation No..... 3097
Title: Densitometers and Methods for Measuring Optical Density

BRIEF OF APPELLANT

To: Mail Stop Appeal Brief-Patents
Commissioner of Patents
P.O. Box 1450
Alexandria VA 22313-1450

From: James D. Shaurette (Tel. 509-624-4276; Fax 509-838-3424)
Wells, St. John, P.S.
601 W. First Avenue, Suite 1300
Spokane, WA 99201-3817

Appellant appeals from the Office Action mailed May 16, 2008 (hereinafter "Office Action" or "Action"). The Commissioner is authorized to charge the fee required under 37 C.F.R. § 41.20(b)(2) to Deposit Account No. 08-2025.

TABLE OF CONTENTS

I. REAL PARTY IN INTEREST

The real party in interest of this application is Hewlett-Packard Development Company, L.P. as evidenced by the full assignment of the pending application to Hewlett-Packard Development Company, L.P. recorded starting at Reel 014483, Frame 0194, in the Assignment Branch of the Patent and Trademark Office. The Hewlett-Packard Development Company, L.P., is a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

II. RELATED APPEALS AND INTERFERENCES

Appellant, Appellant's undersigned legal representative, and the assignee of the pending application are aware of no appeals or interferences which will directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF THE CLAIMS

Claims 1-46 are pending, stand rejected and are appealed.

IV. STATUS OF AMENDMENTS

No amendments have been filed after the Office Action mailed May 16, 2008.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Concise explanations of the subject matter defined in each of the independent claims and argued dependent claims involved in the appeal follow with respect to exemplary illustrative embodiments of the specification and figures.

Referring to independent claim 1, Appellants refer to Fig. 1 and the specification at page 3, line 18 which provide a method according to one embodiment including determining a color, selecting an illumination source, illuminating the area, receiving the radiation and converting the received radiation.

An example of electrical circuitry according to one embodiment is shown in Fig. 3 and discussed at page 6, line 32 of the specification. Fig. 3 shows a densitometer 210 according to one embodiment including an illumination source 215, sensor 220 and processor 205.

Referring to dependent claim 2, a standardized signal indicative of standardized optical density is described at page 5, line 10 according to one embodiment.

Referring to independent claim 9, Appellants refer to Fig. 5 and the specification at page 8, line 13 which provide one embodiment of an apparatus for printing, automatically selecting, illuminating and receiving the signal indicative of optical density according to one embodiment.

Referring to dependent claim 11, a standardized signal indicative of standardized optical density is described at page 5, line 10 according to one embodiment.

Referring to independent claim 13, Appellants refer to Fig. 3 and the specification at page 6, line 32 which disclose a densitometer 210 according to one embodiment including an illumination source 215, sensor 220 and processor 205.

Referring to dependent claim 17, Appellants refer to Fig. 1 and the specification at page 3, line 18 which provides determination of a color at act 10 and selection at act 15 according to one embodiment.

Referring to dependent claim 22, selection and usage of a single illumination source is discussed at page 4, line 3 according to one embodiment.

Referring to independent claim 25, Appellants refer to Fig. 5 and the specification at page 8, lines 13+ which provide means for printing 310, for example in the form of a drum and one or more developer, a controller 315 and a densitometer 210 according to one embodiment.

Referring to dependent claim 28, selection of an illumination source corresponding to a color of ink is discussed at page 4, line 6 according to one embodiment. Appellants refer to Fig. 1 and the specification at page 3, line 18 which provide determination of a color at act 10 and selection at act 15 according to one embodiment.

Referring to dependent claim 30, determination of the color using data regarding a marking agent is described at page 3, line 26 according to one embodiment.

Referring to dependent claim 31, image data used to print a color is described at page 3, line 26 according to one embodiment.

Referring to dependent claim 32, the data regarding the marking agent existing before the color on the area is determined described at page 3, line 26 of the specification in one embodiment.

Referring to dependent claim 35, determination of the color without sensing is described at page 3, line 26 according to one embodiment.

Referring to dependent claim 37, data regarding a color of a marking agent used for printing is described at page 3, line 26 according to one embodiment. Selection of a source using the determined color is described at page 4, line 1 according to one embodiment.

Referring to dependent claim 39, Appellants refer to Fig. 1 and the specification at page 5, lines 10+ which provide conversion to a standardized signal indicative of standardized optical density according to one embodiment.

Referring to dependent claim 44, Appellants refer to Fig. 1 and the specification at page 5, lines 10+ which provide conversion to a standardized signal indicative of standardized optical density according to one embodiment.

Referring to dependent claim 45, illuminating using one source is described at page 4, line 2 according to one embodiment. Receiving radiation is described at page 4, line 31 and converting is described at page 4, line 36 according to one embodiment.

Referring to dependent claim 46, illuminating using one source is described at page 4, line 2 according to one embodiment. Generating a signal indicative of optical density is described at page 4, line 36 according to one embodiment.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. The 102 rejection of claims 1-8, 24, 30-36 and 45 over Hubble.

B. The 103 rejection of claims 9-12, 37 and 46 over Hubble.

C. The 102 rejection of claims 13-23 and 38-40 over Hubble.

D. The 102 rejection of claims 25-29 and 41-44 over Hubble.

E. The 102 and 103 rejections of claims 2-5 and 11 over Hubble.

F. The 102 rejection of claim 17 over Hubble.

G. The 102 rejection of claim 28 over Hubble.

H. The 102 rejection of claims 30-34 over Hubble.

I. The 102 rejection of claim 31 over Hubble.

J. The 102 rejection of claim 32 over Hubble.

K. The 102 rejection of claim 35 over Hubble.

L. The 103 rejection of claim 37 over Hubble.

M. The 102 rejection of claims 39 and 44 over Hubble.

N. The 102 rejection of claim 45 over Hubble.

O. The 102 rejection of claim 46 over Hubble.

VII. ARGUMENT

A. Positively-recited limitations of claims 1-8, 24, 30-36 and 45 are not disclosed by Hubble and the 102 rejection is in error.

Claim 1 recites limitations including *determining a color on an area* in combination with *selecting, based on the color, one of a plurality of different illumination sources appropriate to determine optical density of the color on the area*. At pages 2-3 and 26-27 of the Office Action, the Examiner identifies the lines 1-7 of the Abstract, col. 12, lines 12-16 and col. 12, lines 64+ of U.S. Patent No. 6,384918 to Hubble (hereinafter "Hubble") as allegedly teaching the claimed selecting.

Appellants have failed to uncover limitations of the claimed selecting in such teachings identified by the Office. Furthermore, other teachings of Hubble disclose an entirely different method than the claimed limitations. Appellants respectfully submit the rejection is improper for at least this reason.

The Abstract of Hubble discloses measuring colors of test patches by sequentially angularly illuminating the test patches with *different colors*. These teachings fail to teach *selecting one of a plurality of different illumination sources* let alone *using electrical circuitry, selecting one of a plurality of different illumination sources based on the color which was determined* as recited in claim 1.

Furthermore, the teachings of col. 12, lines 12-16 of Hubble disclose printing test sheets 30 as opposed to normal document images at times and for tests as selected by the controller 100. These teachings to print test sheets to perform tests fail to teach the claimed limitations of *using electrical circuitry, selecting one of a plurality of different illumination sources based on the color which was determined* as recited in claim 1.

The teachings of col. 12, lines 64+ of Hubble merely disclose that illumination from any one of the LED's provides various levels of light reflected from the target and fail to provide any selection teachings let alone selection of one of a plurality of different illumination sources let alone the limitations of *using electrical circuitry, selecting one of a plurality of different illumination sources based on the color which was determined* as recited in claim 1.

To the contrary of teaching the claimed limitations, Hubble discloses that *each test patch is sequentially illuminated using the different LEDs of Figure 3* which fails to teach or suggest the claimed limitations of *selecting one of the different illumination sources based on the color which was determined* in combination with *illuminating the area with the selected illumination source*. In particular, Appellants refer to col. 17, lines 5+ of Hubble which disclose *successive illumination of a test patch by each individual LEDs* and the reflectances from the test patch resulting from the *successive illumination of the test patch by the ten or more different LEDs* may be extrapolated over the entire visible spectra. Col. 17, lines 37+ of Hubble teach *ten different reflectances* from a *single sample color test patch* from the ten different LEDs. As opposed to disclosing the claimed selection of *one of a plurality of sources*, Hubble teaches use of *all of the LEDs to illuminate the patch regardless of the color of the patch being illuminated*.

Appellants respectfully submit the above-recited limitations are not disclosed by Hubble and the 102 rejection is in error for at least this reason.

Claim 1 further recites the *selecting the one of the different illumination sources appropriate to determine optical density of the color (which was determined) on the area*. Hubble teaches *successively illuminating a single test patch using the plurality of LEDs* without reference to any selection of one of the LEDs let alone *selection of the one of the different illumination sources appropriate*

to determine optical density as positively claimed. The teachings of Hubble relied upon by the Office referred to above are *void of any reference to optical density*.

Appellants respectfully submit that the limitations of *selecting, based on the color (of the area which was determined), one of a plurality of different illumination sources appropriate to determine optical density of the color on the area* are not disclosed by the teachings of Hubble and the 102 rejection is in error for at least this reason.

Furthermore, claim 1 recites *converting the received radiation to a signal indicative of optical density of the color (which was determined) on the area*. The teachings of col. 17, lines 6-14 and 39-44 and 50-65 *are void of any reference to optical density* let alone the claimed limitations of *converting the received radiation to a signal indicative of optical density of the color (which was determined) on the area.*

Appellants refer to example embodiments of the specification since patent application claims are interpreted consistent with the specification. *In re Yamamoto*, 740 F2d 1569, 1571 (Fed. Cir. 1984). For example, page 4, line 36 discusses provision of a signal indicative of optical density. Per page 1, line 15, optical density is generally proportional to ink thickness.

Appellants respectfully submit that the converting limitations of the claims are not disclosed by the teachings of Hubble and the 102 rejection is in error for at least this additional reason.

Appellants respectfully submit that positively-recited limitations of the claims are not disclosed by the prior art and the rejections over Hubble are improper for the above-mentioned reasons. Appellants respectfully request reversal of the 102 rejections.

B. Positively-recited limitations of claims 9-12, 37 and 46 are not disclosed nor suggested by Hubble and the 103 rejection is in error.

Referring to independent claim 9, the method recites *based upon the color (of the area), automatically selecting one of a plurality of different illumination sources in a densitometer*.

The teachings of col. 12, lines 64+ of Hubble relied upon by the Office as allegedly teaching the above-recited limitations disclose that illumination from any

one of the LED's provides various levels of light reflected from the target and fail to teach any selection of one of a plurality of different illumination sources let alone the limitations of *based upon the color (of the area), automatically selecting one of a plurality of different illumination sources in a densitometer* as recited in claim 1.

To the contrary of teaching the claimed limitations, Hubble discloses that *each test patch is sequentially illuminated using the different LEDs* which fails to teach or suggest the claimed limitations of *selecting one of the different illumination sources based on the color of the area* in combination with *illuminating the area using the selected illumination source*. In particular, Appellants refer to col. 17, lines 5+ of Hubble which disclose *successive illumination of a test patch by each individual LEDs* and the reflectances from the test patch resulting from the successive illumination of the test patch by the *ten or more different LEDs* may be extrapolated over the entire visible spectra. Col. 17, lines 37+ of Hubble teach *ten different reflectances* from a *single sample color test patch* from the *ten different LEDs*.

Appellants also refer to the statements of the Office at the last paragraph of page 22 of the Office Action which provides that Hubble discloses that *a test patch is successively illuminated by each individual LED*. Hubble does not teach *selection of one a plurality of different illumination sources based on a color of the area as claimed* but rather teaches illumination of patches using all of the LEDs.

Referring to pages 23-24 of the Office Action, the Office relies upon *In re Venner* 120 USPQ 192 (C.C.P.A 1958) for the position that providing a mechanical or automatic means to replace manual activity which has accomplished the same result involves only routine skill in the art. However, in *Venner*, the only distinction of the application from the prior art was the inclusion of a timer and solenoid to automatically perform a previously known manual operation (see pages 194-195).

Appellants respectfully submit that *Venner* fails to support a rejection of claim 9. In particular, the only distinction of claim 9 from Hubble is not merely automatic operation versus manual operation. Rather, the underlying limitations of *selection of one of a plurality of illumination sources* are not disclosed nor suggested by Hubble let alone the *selection based on a color of a printed area* as claimed. Appellants respectfully submit that even if automatic operation of the claimed selection is not considered to carry significant patentable weight, the

rejection is improper *since the claimed selecting of one of a plurality of illumination sources based on a color of a printed area is not disclosed anywhere in the prior art*. To the contrary of the claimed selection, Hubble teaches use of *all of the LEDs to illuminate the patches regardless of the color of the patches being illuminated*.

Appellants respectfully submit the limitations of *automatically selecting one of a plurality of different illumination sources in a densitometer based upon a color of a printed area* is not disclosed nor suggested by the prior art the 103 rejection is in error for at least this reason.

Furthermore, the method recites *receiving a signal indicative of optical density in the area from the densitometer after the selecting*.

The Office relies upon teachings in col. 17, lines 6-14, 39-44, 50-65 and 54-59 and col. 18, lines 54-59 as allegedly teaching the above-recited limitations. However, these teachings fail to refer to *optical density* and fail to disclose or suggest the claimed limitations. In particular, the teachings in col. 17 provide recording, sampling or measuring reflectance *void of any teaching or suggestion of optical density*. The teachings in col. 18 disclose illumination and comparison of results with white tile characteristics *void of any reference to optical density*.

Appellants respectfully submit that the prior art teachings void of any reference to optical density may not be fairly considered to teach the claimed limitations reciting *receiving a signal indicative of optical density in the area from the densitometer after the selecting.*

Appellants respectfully submit the rejection is in error for this additional reason.

Appellants respectfully submit that positively-recited limitations of the claims are not disclosed nor suggested by the prior art and the rejections over Hubble are improper for the above-mentioned reasons. Appellants respectfully request reversal of the 102 rejections.

C. Positively-recited limitations of claims 13-23 and 38-40 are not disclosed by Hubble and the 102 rejection is in error.

Referring to independent claim 13, the densitometer recites a sensor for converting radiation received from an area and a *processor coupled to the sensor for converting the received radiation to a standardized signal indicative of standardized optical density*.

The Office relies upon the teachings of col. 10, lines 46-62 and col. 4, lines 14-17 of Hubble as allegedly teaching the above-recited processor. Appellants respectfully submit these teachings fail to refer to optical density, standardized optical density or the claimed *processor coupled to the sensor for converting the received radiation to a standardized signal indicative of standardized optical density*.

In particular, col. 4, lines 14-17 of Hubble merely state that the spectrophotometer or other color sensor reads the colors of the test patches and the measured colors may be processed inside a controller to produce or modify the tone reproduction curve. These teachings fail to provide any teachings of optical density or standardized optical density let alone the above-recited limitations.

Furthermore, the teachings of col. 10, lines 14-17 of Hubble refer to generic teachings of a control system and fail to refer to optical density or standardized optical density and cannot be fairly interpreted to teach the above-recited limitations of the *processor coupled to the sensor for converting the received radiation to a standardized signal indicative of standardized optical density*.

In addition, the Office has provided no evidence that generic conversion of RGB to LAB may be fairly considered to teach the above-recited limitations of the *processor coupled to the sensor for converting the received radiation to a standardized signal indicative of standardized optical density* especially in the absence of any reference to optical density or standardized optical density in the Hubble teachings relied upon by the Office.

Appellants again refer to examples of the specification, one embodiment at page 4, line 36 discusses provision of a signal indicative of optical density and page 5, line 10 discusses standardized optical density. In one embodiment, standardization refers to compensating for the spectrum of illuminating radiation to the area measured. Per page 1, line 15, optical density is generally proportional to ink thickness.

Appellants respectfully submit that the teachings of Hubble may not be fairly interpreted to teach the claimed limitations with respect to standardized optical density (when properly interpreted consistent with the specification) in the absence of any optical density teachings (standardized or otherwise) in the Hubble teachings relied upon by the Office in support of the rejection.

Appellants respectfully submit the above-recited limitations are not disclosed or suggested by Hubble and the 102 rejection is in error for at least this reason.

Additionally, Applicants respectfully submit that any reliance upon judicial notice in support of the rejection of the claims is improper. In particular, Appellants traversed any reliance upon judicial notice in the response of Appellants' filed February 1, 2008. The Office has failed to identify any other teachings of the prior art despite Appellants' previous traversal.

More specifically, MPEP 2144.03A (8th ed., rev. 6) provides that *official notice unsupported by documentary evidence should only be taken by the examiner when the facts asserted to be well known or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well known*. It is *not appropriate* for the Office to take official notice of facts without a reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known. In addition, claims are analyzed in the context of the combination of the various separately stated limitations of the claimed invention as a whole, and not with respect to the limitations individually. MPEP 2144.03A (8th ed., rev. 6) provides that *official notice is proper when the facts are capable of instant and unquestionable demonstration as to defy dispute*. MPEP 2144.03A gives examples of limitations which are considered well known, such as when new audio information is recorded then the old information is erased, or when a heat requirement is varied it is well known to vary a flame. The MPEP states that Official Notice is proper when the *teachings are readily verifiable* (e.g., use of a control in bacteriology). MPEP 2144.03B (8th ed., rev. 6). MPEP 2144.03A and 2144.04E make clear that *Official Notice is proper with respect to facts which are of notorious character and serve only to fill in the gaps in an insubstantial manner*.

Appellants respectfully assert that the combination of limitations of claim 13 including the processor coupled to the sensor for converting the received radiation

to a *standardized signal indicative of standardized optical density* has not been demonstrated to be well known in combination with the other claimed limitations. The specifically claimed processor is not notorious and is not insubstantial and the reliance upon judicial notice is improper and traversed.

Appellants respectfully submit that the failure of the Office to identify any prior art which teaches the above-recited limitations illustrates that reliance upon judicial notice is improper and the 102 rejection is in error.

Appellants respectfully submit that positively-recited limitations of the claims are not disclosed nor suggested by the prior art and the rejections over Hubble are improper for at least this reason. Appellants respectfully request reversal of the rejection of the claims.

D. Positively-recited limitations of claims 25-29 and 41-44 are not disclosed by Hubble and the 102 rejection is in error.

Referring to independent claim 25, the printing apparatus comprises a *densitometer to generate a standardized signal indicative of standardized optical density of the area*.

The Office relies upon the teachings of col. 13, lines 49-57, col. 11, lines 37-45, and col. 14, lines 35-44 of Hubble as allegedly teaching the above-recited limitations. The teachings of col. 11 relied upon by the Office are a description of Fig. 5 and fail to refer to optical density or standardized optical density and fail to teach the above-recited limitations regarding standardized optical density. The teachings of col. 13 refer to generic operations of converting device independent data to device dependent data which fail to disclose the above-recited limitations regarding standardized optical density. The teachings in col. 14 disclose teachings of how to provide test patch illumination which is compatible with industry standards which fail to teach the above-recited limitations regarding standardized optical density.

Appellants respectfully submit that the Hubble teachings relied upon by the Office and void of any reference to optical density or standardized optical density may not be fairly considered to teach the above-recited limitations of the *densitometer to generate a standardized signal indicative of standardized optical*

density of the area when such limitations are properly interpreted in accordance with Appellants' specification.

Appellants respectfully submit that positively-recited limitations of the claims are not disclosed nor suggested by the prior art and the rejections over Hubble are improper for at least this reason. Appellants respectfully request reversal of the rejection of the claims.

E. Positively-recited limitations of claims 2-5 and 11 are not disclosed by Hubble and the 102 and 103 rejections are in error.

The claims recite that the signal indicative of optical density comprises a *standardized signal indicative of standardized optical density*.

The Office relies upon the teachings of col. 3, lines 15-46, col. 7, lines 24-49 and col. 14, lines 35-44 of Hubble as allegedly teaching the above-recited limitations. The teachings of col. 3 are void of any reference to a standardized signal or standardized optical density and fail to teach the claimed limitations. The teachings in col. 7 refer to generic color correction and mapping between different color spaces also void of any reference to a standardized signal or standardized optical density. The teachings in col. 14 refer to providing test patch illumination which is compatible with industry standards which fail to teach the above-recited limitations regarding standardized optical density.

Appellants respectfully submit that positively-recited limitations of the claims are not disclosed nor suggested by the prior art and the rejections over Hubble are improper for at least this reason. Appellants respectfully request reversal of the rejections of the claims.

F. Positively-recited limitations of claim 17 are not disclosed by Hubble and the 102 rejection is in error.

The claim recites the processor is configured to *determine a color of an area and to select one of a plurality of different illumination sources responsive to the determination of the color*. The teachings in col. 12, lines 67+ fail to disclose the claimed selection but rather merely disclose that illuminations by different LEDs provides various levels of light. The teachings in col. 2, lines 29+ of Hubble refer to trichometric values and fail to teach the claimed determination or selection. Col.

14, lines 35+ of Hubble refer to providing test patch illumination which is compatible with industry standards which fails to teach the above-recited limitations.

To the contrary of teaching the claimed determination or selection, col. 17, lines 5+ of Hubble disclose *successive illumination of a test patch by each individual LEDs* and the reflectances from the test patch resulting from the successive illumination of the test patch by the ten or more different LEDs may be extrapolated over the entire visible spectra. Col. 17, lines 37+ of Hubble teach *ten different reflectances* from a *single sample color test patch* from the ten different LEDs. As opposed to disclosing the claimed determination and selection of one source responsive to the determination of the color, Hubble teaches use of *all of the LEDs to illuminate the patch regardless of the color of the patch being illuminated*.

The teachings of Hubble are void of *determining a color of the area let alone the selection of one of the different illumination sources responsive to the determination of the color as claimed*.

Appellants respectfully submit that positively-recited limitations of the claims are not disclosed nor suggested by the prior art and the rejections over Hubble are improper for at least this reason. Appellants respectfully request reversal of the rejection of the claim.

G. Positively-recited limitations of claim 28 are not disclosed by Hubble and the 102 rejection is in error.

The claim recites the densitometer is configured to *determine a color of ink printed on the area and to select at least one of a plurality of different illumination sources corresponding to the determination of the color of the ink*. The teachings in col. 12, lines 24+ of Hubble disclose sequentially reading test patches and fail to disclose the claimed determination and selection limitations. To the contrary of teaching the claimed determination or selection, col. 17, lines 5+ of Hubble disclose *successive illumination of a test patch by each individual LEDs* and the reflectances from the test patch resulting from the successive illumination of the test patch by the ten or more different LEDs may be extrapolated over the entire visible spectra. Col. 17, lines 37+ of Hubble teach *ten different reflectances* from a *single sample color test patch* from the ten different LEDs. As opposed to

disclosing the claimed selection of at least one source *corresponding to the determination of the color of the ink* printed on the area, Hubble teaches use of *all of the LEDs to illuminate the patch regardless of the color of the patch being illuminated*.

The teachings of Hubble are void of *determining a color of the area let alone the selection of at least one of the different illumination sources corresponding to the determination of the color of the ink as claimed*.

Appellants respectfully submit that positively-recited limitations of the claim are not disclosed nor suggested by the prior art and the rejections over Hubble are improper for at least this reason. Appellants respectfully request reversal of the rejection of the claim.

H. Positively-recited limitations of claims 30-34 are not disclosed by Hubble and the 102 rejection is in error.

Claim 30 recites that the *determining the color of claim 1 comprises determining using data regarding a marking agent used to print the color on the area.*

The specification at page 3, line 26 provides in one example that data of the marking agent which is used to control the color printed on the area may be used to determine the color as opposed to sensing the color from the printed area and which eliminates the need to sense the color. The teachings in col. 7, lines 1+ and col. 1, lines 28+ of Hubble refer to absorption of light by ideal toners and measurement of colors, respectively, which fail to teach the above-recited limitations. Hubble discloses in Fig. 2 exposing the printed surface to illumination of many sources (Fig. 3) to determine the color of the surface which fails to teach the limitations of *determining the color using data regarding the marking agent used to print the color* as claimed.

Appellants respectfully submit that positively-recited limitations of the claim are not disclosed nor suggested by the prior art and the rejection over Hubble is improper for at least this reason. Appellants respectfully request reversal of the rejection of the claim.

I. Positively-recited limitations of claim 31 are not disclosed by Hubble and the 102 rejection is in error.

Claim 31 further defines claim 30 and recites that *image data is used to print the color on the area, and the data regarding the marking agent (used to print the color on the area per claim 30) is accessed from the image data*.

For example, in one embodiment described at page 3, line 26 of the specification, data to control the formation of colors of an image to be printed is stored in memory and which may be accessed to control the printing of colors of the image.

The Hubble teachings in col. 7, lines 1+ and col. 1, lines 28+ of Hubble refer to absorption of light by ideal toners and measurement of colors, respectively, which fail to teach the above-recited limitations. Hubble discloses in Fig. 2 exposing the printed surface to illumination of many sources (Fig. 3) to determine the color of the surface which fails to teach the limitations of determining the color on the area using data accessed from the image data which is used to print the color on the area as recited by the combination of claimed limitations.

Appellants respectfully submit that positively-recited limitations of the claim are not disclosed nor suggested by the prior art and the rejection over Hubble is improper for at least this reason. Appellants respectfully request reversal of the rejection of the claim.

J. Positively-recited limitations of claim 32 are not disclosed by Hubble and the 102 rejection is in error.

Claim 32 further defines claim 30 and recites that *the data regarding the marking agent (used to print the color in the area per claim 30) is provided before the determining of the color*.

As mentioned above, in one embodiment, data in the form of image data to control the formation of colors of an image to be printed is stored in memory and which may be accessed to control the printing of the image before the image is printed.

The Hubble teachings in col. 7, lines 1+ and col. 1, lines 28+ of Hubble refer to absorption of light by ideal toners and measurement of colors, respectively, which fail to teach the above-recited limitations. Hubble discloses in Fig. 2

exposing the printed surface to illumination of many sources (Fig. 3) and sensing the reflectances to determine the color of the surface. Accordingly, Hubble discloses measuring the color printed on the surface. Hubble provides data regarding the color after the color has been determined by exposure to illumination which fails to teach the limitations of *determining the color using data which is provided before the determining the color* in combination with *selecting, based on the determined color, one of the plurality of different illumination sources* as recited by the combination of claim limitations.

Appellants respectfully submit that positively-recited limitations of the claim are not disclosed nor suggested by the prior art and the rejection over Hubble is improper for at least this reason. Appellants respectfully request reversal of the rejection of the claim.

K. Positively-recited limitations of claim 35 are not disclosed by Hubble and the 102 rejection is in error.

Claim 35 recites that the *determining the color on the area (and selecting one of the plurality of different illumination sources based on the determined color per claim 1) comprises determining without sensing of the area*.

The Office relies upon the teachings of col. 4, lines 5-20 of Hubble as teaching these limitations. However, these teachings disclose the *exact opposite* of the claimed limitations by teaching that the *spectrophotometer or other color sensor senses the colors of the test patches*.

Appellants respectfully submit that positively-recited limitations of the claim are not disclosed nor suggested by the prior art and the rejection over Hubble is improper for at least this reason. Appellants respectfully request reversal of the rejection of the claim.

L. Positively-recited limitations of claim 37 are not disclosed by Hubble and the 103 rejection is in error.

Claim 37 further defines claim 9 and recites that the *printing comprises providing data regarding a color of a marking agent used for the printing*, and wherein the *selecting comprises selecting using the data used for the printing*.

Hubble teaches sequential illumination of a patch using all of the LEDs to sense the color of the patch. Hubble fails to teach *selecting one of a plurality of different illumination sources* in a densitometer of claim 9 let alone the claimed *selecting the one of the sources using data regarding a color of a marking agent which was used for printing the area having the color*. The teachings in col. 1 of Hubble relied upon by the Office generically refer to a spectrophotometer and fail to disclose selection one of a plurality of illumination sources let alone the selecting using data regarding a color of a marking agent which was used for the printing as claimed.

Appellants respectfully submit that positively-recited limitations of the claim are not disclosed nor suggested by the prior art and the rejection over Hubble is improper for at least this reason. Appellants respectfully request reversal of the rejection of the claim.

M. Positively-recited limitations of claims 39 and 44 are not disclosed by Hubble and the 102 rejection is in error.

The claims recite *conversion of a signal indicative of optical density to a standardized signal indicative of standardized optical density*.

The teachings in col. 2, lines 29+ of Hubble relied upon by the Office refer to trichometric values. Col. 14, lines 35+ of Hubble refer to providing test patch illumination which is compatible with industry standards which fail to teach the above-recited limitations. These teachings *fail to include any disclosure regarding optical density, signals indicative of optical density or standardized optical density* let alone the claim limitations of *conversion of a signal indicative of optical density to a standardized signal indicative of standardized optical density*.

Appellants respectfully submit that positively-recited limitations of the claims are not disclosed nor suggested by the prior art and the rejections over Hubble are improper for at least this reason. Appellants respectfully request reversal of the rejection of the claims.

N. Positively-recited limitations of claim 45 are not disclosed by Hubble and the 102 rejection is in error.

Claim 45 recites that the illuminating of claim 1 comprises *illuminating only using the selected one of the different illumination sources, the receiving comprises receiving the radiation responsive to the illuminating using only the selected one of the different illumination sources, and the converting comprises converting only the received radiation to the signal indicative of the optical density of the color on the area*.

Hubble discloses that *each test patch is sequentially illuminated using the plurality of different LEDs* which fails to teach or suggest the above-recited claimed limitations of *illuminating the area only using the selected one of the sources*. In particular, Appellants refer to col. 17, lines 5+ of Hubble which disclose *successive illumination of a test patch by each individual LEDs* and the reflectances from the test patch resulting from the successive illumination of the test patch by the ten or more different LEDs may be extrapolated over the entire visible spectra. Col. 17, lines 37+ of Hubble teach *ten different reflectances* from a *single sample color test patch* from the ten different LEDs. As opposed to disclosing the claimed illumination only using the selected one of the sources, Hubble teaches use of *all of the LEDs to illuminate the patch*.

The illumination of patches using all of the LEDs in Hubble fails to teach other limitations of claim 45 including *receiving the radiation responsive to the illuminating using only the selected one of the different illumination sources, and the converting comprises converting only the received radiation to the signal indicative of the optical density of the color on the area*.

The teachings in col. 17, lines 6-8 and 45-50 of Hubble clearly disclose illumination using all of the LEDs sequentially or otherwise and fail to teach the above-recited limitations. Col. 18, lines 23-27 and 54-59 of Hubble refer to calibration of LEDs and fail to teach the above-recited limitations of illuminating, receiving and converting to a signal indicative of optical density.

Appellants respectfully submit that positively-recited limitations of the claim are not disclosed nor suggested by the prior art and the rejection over Hubble is improper for at least this reason. Appellants respectfully request reversal of the rejection of the claim.

O. Positively-recited limitations of claim 46 are not disclosed by Hubble and the 102 rejection is in error.

Claim 46 recites that the illuminating of claim 9 comprises *illuminating only using the selected one of the different illumination sources, and further comprising generating the signal indicative of the optical density in the area using only the illuminating of the area using only the selected one of the different illumination sources*.

Hubble discloses that *each test patch is sequentially illuminated using the plurality of different LEDs* which fails to teach or suggest the above-recited claimed limitations of *illuminating the area only using the selected one of the sources*. Col. 17, lines 5+ of Hubble which disclose *successive illumination of a test patch by each individual LEDs* and the reflectances from the test patch resulting from the successive illumination of the test patch by the ten or more different LEDs may be extrapolated over the entire visible spectra. Col. 17, lines 37+ of Hubble teach *ten different reflectances* from a *single sample color test patch* from the ten different LEDs. As opposed to disclosing the claimed illuminating only using the selected one source, Hubble teaches use of *all of the LEDs to illuminate the patch*.

The illumination of patches using all of the LEDs in Hubble fails to teach other limitations of claim 46 including *generating the signal indicative of the optical density in the area using only the illuminating of the area using only the selected one of the different illumination sources*.

The teachings in col. 17, lines 6-8 and 45-50 of Hubble clearly disclose illumination using all of the LEDs sequentially or otherwise and fail to teach the above-recited limitations. Col. 18, lines 23-27 and 54-59 of Hubble refer to calibration of LEDs and fail to teach the above-recited limitations of illuminating and generating the signal indicative of optical density.

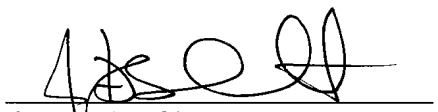
Appellants respectfully submit that positively-recited limitations of the claim are not disclosed nor suggested by the prior art and the rejection over Hubble is improper for at least this reason. Appellants respectfully request reversal of the rejection of the claim.

P. Conclusion

In view of the foregoing, reversal of the rejections of the claims is respectfully requested. For any one of the above-stated reasons, the rejections of the respective claims should be reversed. In combination, the above-stated reasons overwhelmingly support such reversal. Accordingly, Appellants respectfully request that the Board reverse the rejections of the claims.

Respectfully submitted,

Date: 10/20/08

Attorney: 

James D. Shaurette
Reg. No. 39,833

VIII. CLAIMS APPENDIX

1. [Previously Presented] A method for measuring optical density, the method comprising:

using electrical circuitry, determining a color on an area;

using electrical circuitry, selecting, based on the color, one of a plurality of different illumination sources appropriate to determine optical density of the color on the area;

illuminating the area with the selected illumination source;

receiving radiation from the area responsive to the illuminating; and

converting the received radiation to a signal indicative of optical density of the color on the area.

2. [Original] A method for measuring optical density according to claim 1, wherein the signal indicative of optical density comprises a standardized signal indicative of standardized optical density.

3. [Original] A method for measuring optical density according to claim 2, wherein the converting comprises:

selecting a look-up table based on the color on the area, wherein the look-up table associates the received radiation with a standardized signal indicative of standardized optical density.

4. [Original] A method for measuring optical density according to claim 2, wherein the selected illumination source provides illumination having a first spectrum and said converting comprises compensating for at least one difference between the first spectrum and a standard spectrum to generate the standardized signal indicative of standardized optical density.

5. [Original] A method for measuring optical density according to claim 2, further comprising:

generating a look-up table for converting the received radiation to the standardized signal indicative of standardized optical density.

6. [Original] A method for measuring optical density according to claim 1, wherein converting the received radiation to a signal indicative of optical density comprises:

compensating for the effects of heating of the selected illumination source during illumination of the area.

7. [Original] A method for measuring optical density according to claim 6, wherein the selected illumination source comprises a light emitting diode and the compensating for the effects of heating comprises measuring the voltage across the light emitting diode.

8. [Original] A method for measuring optical density according to claim 7, wherein the compensating for the effects of heating further comprises generating a corrected signal indicative of optical density using a non-linear relationship between the voltage across the light emitting diode and the signal indicative of optical density.

9. [Previously Presented] A method for calibrating a printing apparatus, the method comprising:

printing an area having a color;

based on the color, automatically selecting one of a plurality of different illumination sources in a densitometer without user input;

illuminating the area using the selected illumination source; and

receiving a signal indicative of optical density in the area from the densitometer after the selecting.

10. [Original] A method for calibrating a printing apparatus according to claim 9, wherein:

the printing comprises printing a plurality of areas, each having a color; and

the receiving comprises receiving a signal indicative of optical density in each of the areas.

11. [Original] A method for calibrating a printing apparatus according to claim 9, wherein the signal indicative of optical density comprises a standardized signal indicative of standardized optical density.

12. [Original] A method for calibrating a printing apparatus according to claim 9, further comprising:

compensating for the effects of heating of the selected illumination source during illumination of the area.

13. [Original] A densitometer comprising:

at least a first illumination source to illuminate an area;

a sensor for converting radiation received from the area; and

a processor coupled to the sensor for converting the received radiation to a standardized signal indicative of standardized optical density.

14. [Original] A densitometer according to claim 13, further comprising a plurality of illumination sources.

15. [Original] A densitometer according to claim 14, wherein the plurality of illumination sources comprise light emitting diodes.

16. [Original] A densitometer according to claim 13, wherein the processor is further configured to compensate for the effects of heating of the illumination source during illumination.

17. [Previously Presented] A densitometer according to claim 13, wherein the processor is further configured to determine a color of the area and select one of a plurality of different illumination sources for use to determine the standardized optical density of the color of the area, and wherein the selection is responsive to the determination of the color.

18. [Original] A densitometer according to claim 13, further comprising a memory coupled to the processor, wherein the memory stores a look-up table for converting the received radiation to the standardized signal indicative of standardized optical density.

19. [Original] A densitometer according to claim 13, wherein the first illumination source is selected from a plurality of illumination sources selected from the set consisting of red, green, blue, and orange.

20. [Previously Presented] A densitometer according to claim 19, wherein the first illumination source is selected from the plurality of illumination sources based on the source having a color that is substantially a color complement to an area of a media to be measured.

21. [Original] A densitometer according to claim 13, further comprising a memory for receiving and storing data regarding inks used to print one or more areas to be measured, and means for accessing the stored data to determine the color printed on an area, the data being used to select a spectral wavelength of the at least a first illumination source.

22. [Original] A densitometer according to claim 13, wherein the at least a first illumination source to illuminate an area is exactly a single illumination source having a spectral wavelength range narrower than the spectrum of visible white light.

23. [Original] A densitometer according to claim 22, wherein the single illumination source having a spectral wavelength range narrower than the spectrum of visible white light comprises a light emitting diode having one of a red, green, blue, orange color spectral output.

24. [Original] An article printed using the method of measuring optical density of claim 1.

25. [Previously Presented] A printing apparatus comprising:

means for printing at least one ink on an area;

a controller coupled to the means for printing; and

a densitometer coupled to the controller, the densitometer positioned to illuminate the area and generate a standardized signal indicative of standardized optical density of the area responsive to the illumination.

26. [Original] The printing apparatus of claim 25, wherein the densitometer comprises at least one light emitting diode.

27. [Original] The printing apparatus of claim 25, wherein the densitometer comprises a sensor positioned to receive radiation from the area.

28. [Previously Presented] The printing apparatus of claim 25, wherein the densitometer is configured to determine the color of ink printed on the area and to select at least one of a plurality of different illumination sources for the illumination and corresponding to the determination of the color of ink.

29. [Original] A printing media printed with the printing apparatus of claim 25.

30. [Previously Presented] A method for measuring optical density according to claim 1, wherein the determining comprises using data regarding a marking agent used to print the color on the area.

31. [Previously Presented] A method for measuring optical density according to claim 30, wherein image data is used to print the color on the area, and wherein the data regarding the marking agent is accessed from the image data.

32. [Previously Presented] A method for measuring optical density according to claim 30, wherein the data is provided before the determining.

33. [Previously Presented] A method for measuring optical density according to claim 30, wherein the data is provided during the printing of the marking agent on the area and the data indicates the color of the marking agent used to print the color on the area.

34. [Previously Presented] A method for measuring optical density according to claim 30, further comprising accessing the data from storage circuitry.

35. [Previously Presented] A method for measuring optical density according to claim 1, wherein the determining comprises determining without sensing of the area.

36. [Previously Presented] A method for measuring optical density according to claim 1, wherein the determining comprises determining before completion of printing of the color on the area.

37. [Previously Presented] A method for calibrating a printing apparatus according to claim 9, wherein the printing comprises providing data regarding a color of a marking agent used for the printing, and wherein the automatically selecting comprises selecting using the data.

38. [Previously Presented] A densitometer according to claim 13, wherein the standardized optical density provides optical density information in accordance with a standard predefined before the conversion of the received radiation to the standardized signal.

39. [Previously Presented] A densitometer according to claim 38, wherein the processor is configured to convert the received radiation to a signal indicative of optical density and to convert the signal indicative of optical density to the standardized signal indicative of standardized optical density.

40. [Previously Presented] A densitometer according to claim 17, wherein the processor is configured to select the one illumination source using data generated during printing of a marking agent on the area.

41. [Previously Presented] The printing apparatus of claim 25, wherein the means for printing comprises means for providing data regarding the at least one ink, and one of a plurality of different illuminant sources of the densitometer is selected for the illumination using the data regarding the at least one ink.

42. [Previously Presented] The printing apparatus of claim 41, wherein the data is provided before completion of the printing of the at least one ink on the area.

43. [Previously Presented] The printing apparatus of claim 25, wherein the standardized optical density provides optical density information according to a standard predefined before the illumination of the area.

44. [Previously Presented] The printing apparatus of claim 43, wherein the densitometer is configured to convert a signal indicative of optical density to the standardized signal indicative of standardized optical density.

45. [Previously Presented] A method for measuring optical density according to claim 1, wherein the illuminating comprises illuminating only using the selected one of the different illumination sources, the receiving comprises receiving the radiation responsive to the illuminating using only the selected one of the different illumination sources, and the converting comprises converting only the received radiation to the signal indicative of the optical density of the color on the area.

46. [Previously Presented] A method for calibrating a printing apparatus according to claim 9, wherein the illuminating comprises illuminating only using the selected one of the different illumination sources, and further comprising generating the signal indicative of the optical density in the area

using only the illuminating of the area using only the selected one of the different illumination sources.

IX. EVIDENCE APPENDIX

Appellants submit no evidence with this appellate brief.

X. RELATED PROCEEDINGS APPENDIX

Appellants are not aware of any related proceedings.